TABLE 2.—*Free-air resultant winds based on pilot balloon observations made near 5 p. m. (75th meridian time) during April 1942. Directions given in degrees from North (N=360°, E=90°, S=180°, W=270°)—Velocities in meters per second*—Continued

| Altitude (meters) m. s. l. | New York, N. Y. (15 m.) | | | Oakland, Calif. (8 m.) | | | Oklahoma City, Okla. (402 m.) | | | Omaha, Nebr. (306 m.) | | | Phoenix, Ariz. (338 m.) | | | Rapid City, S. Dak. (982 m.) | | | St. Louis, Mo. (181 m.) | | | San Antonio, Tex. (180 m.) | | | San Diego, Calif. (15 m.) | | | Sault St. Marie, Mich. (230 m.) | | | Seattle, Wash. (12 m.) | | | Spokane, Wash. (603 m.) | | | Washington, D. C. (24 m.) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Observations | Direction | Velocity | Observations | Direction | Velocity | Observations | Direction | Velocity | Observations | Direction | Velocity | Observations | Direction | Velocity | Observations | Direction | Velocity | Observations | Direction | Velocity | Observations | Direction | Velocity | Observations | Direction | Velocity | Observations | Direction | Velocity | Observations | Direction | Velocity | Observations | Direction | Velocity | Observations | Direction | Velocity |
| Surface | 28 | 241 | 2.1 | 28 | 250 | 4.2 | 24 | 178 | 8.4 | 30 | 170 | 3.2 | 30 | 246 | 1.5 | 26 | 210 | 1.3 | 28 | 164 | 3.7 | 29 | 133 | 3.6 | 23 | 264 | 3.9 | 29 | 278 | 2.5 | 30 | 257 | 2.4 | 27 | 215 | 2.0 | 29 | 303 | 1.6 |
| 500 | 28 | 273 | 4.6 | 28 | 242 | 3.2 | 24 | 182 | 9.9 | 30 | 169 | 3.8 | 30 | 247 | 2.4 | | | | 28 | 168 | 4.1 | 29 | 130 | 5.0 | 23 | 274 | 4.0 | 29 | 270 | 3.6 | 30 | 209 | 2.5 | | | | 29 | 286 | 3.3 |
| 1,000 | 26 | 292 | 6.0 | 23 | 247 | 2.3 | 23 | 183 | 9.2 | 30 | 174 | 4.3 | 30 | 242 | 3.0 | 26 | 213 | 1.3 | 27 | 190 | 5.1 | 28 | 145 | 5.0 | 20 | 258 | 2.4 | 29 | 273 | 4.3 | 29 | 192 | 3.9 | 27 | 223 | 4.6 | 27 | 282 | 4.9 |
| 1,500 | 25 | 305 | 8.6 | 21 | 223 | 2.2 | 22 | 193 | 8.8 | 27 | 188 | 5.0 | 30 | 233 | 3.8 | 26 | 216 | 2.0 | 27 | 221 | 6.2 | 26 | 165 | 4.5 | 18 | 284 | 1.5 | 29 | 307 | 3.5 | 28 | 189 | 5.6 | 27 | 221 | 3.5 | 27 | 294 | 6.0 |
| 2,000 | 17 | 322 | 9.5 | 17 | 292 | 2.9 | 20 | 207 | 10.3 | 25 | 208 | 4.6 | 30 | 227 | 4.8 | 24 | 234 | 4.1 | 26 | 236 | 6.1 | 22 | 209 | 3.3 | 14 | 254 | 2.2 | 29 | 306 | 4.6 | 24 | 191 | 7.1 | 26 | 226 | 5.1 | 23 | 299 | 7.2 |
| 2,500 | 15 | 326 | 10.8 | 15 | 306 | 4.0 | 16 | 229 | 9.8 | 22 | 238 | 5.1 | 30 | 234 | 5.6 | 19 | 237 | 6.2 | 25 | 250 | 7.5 | 15 | 251 | 3.2 | 14 | 266 | 3.2 | 25 | 302 | 6.6 | 21 | 205 | 6.4 | 26 | 223 | 5.6 | 19 | 301 | 7.3 |
| 3,000 | 13 | 336 | 12.0 | 13 | 337 | 7.6 | 15 | 226 | 8.3 | 21 | 247 | 5.9 | 30 | 245 | 6.6 | 17 | 243 | 7.1 | 24 | 266 | 7.8 | 13 | 253 | 4.9 | 13 | 303 | 6.1 | 21 | 312 | 7.8 | 19 | 216 | 8.2 | 23 | 228 | 6.2 | 18 | 311 | 8.7 |
| 4,000 | | | | 13 | 309 | 9.2 | 13 | 250 | 9.8 | 16 | 256 | 5.0 | 29 | 250 | 8.9 | 16 | 259 | 8.1 | 21 | 271 | 7.3 | 12 | 268 | 9.8 | | | | 17 | 301 | 10.3 | 13 | 214 | 8.8 | 18 | 239 | 7.4 | 14 | 320 | 10.4 |
| 5,000 | | | | 11 | 326 | 12.4 | 11 | 265 | 11.7 | 14 | 254 | 5.4 | 23 | 262 | 11.2 | 14 | 243 | 11.2 | 16 | 293 | 7.1 | | | | | | | 10 | 295 | 12.3 | | | | 13 | 246 | 7.4 | 12 | 312 | 12.2 |
| 6,000 | | | | 10 | 317 | 16.3 | 11 | 265 | 13.4 | 13 | 267 | 5.2 | 21 | 265 | 12.8 | 12 | 253 | 10.8 | 14 | 300 | 8.8 | | | | | | | | | | | | 11 | 251 | 8.3 | 11 | 321 | 14.1 |
| 8,000 | | | | | | | 10 | 267 | 15.2 | 10 | 297 | 9.6 | 20 | 274 | 16.4 | 11 | 248 | 16.8 | 12 | 306 | 9.3 | | | | | | | | | | | | | | | | | | |
| 10,000 | | | | | | | | | | | | | 14 | 274 | 19.3 | | | | | | | | | | | | | | | | | | | | | | | | |
| 12,000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14,000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

TABLE 3.—*Maximum free-air wind velocities (m. p. s.), for different sections of the United States, based on pilot-balloon observations during April 1942*

| Section | Surface to 2,500 meters (m. s. l.) | | | | | Between 2,500 and 5,000 meters (m. s. o.) | | | | | Above 5,000 meters (m. s. l.) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Maximum velocity | Direction | Altitude (m.) m. s. l. | Date | Station | Maximum velocity | Direction | Altitude (m.) m. s. l. | Date | Station | Maximum velocity | Direction | Altitude (m.) m. s. l. | Date | Station |
| Northeast [1] | 35.6 | WSW | 1,000 | 2 | Boston, Mass. | 42.4 | W | 3,350 | 6 | Caribou, Maine | 61.6 | NNW | 6,730 | 8 | Portland, Maine. |
| East-Central [2] | 36.5 | SW | 2,500 | 9 | Knoxville, Tenn. | 53.0 | WNW | 4,400 | 11 | Greensboro, N. C. | 61.2 | WNW | 6,030 | 11 | Greensboro, N. C. |
| Southeast [3] | 30.7 | S | 1,370 | 7 | Birmingham, Ala. | 34.8 | NW | 3,740 | 11 | Atlanta, Ga. | 61.0 | W | 12,780 | 11 | Miami, Fla. |
| North-Central [4] | 45.1 | W | 1,610 | 28 | Duluth, Minn. | 51.4 | W | 3,950 | 28 | Duluth, Minn. | 74.0 | WSW | 10,210 | 9 | Marquette, Mich. |
| Central [5] | 42.4 | SSW | 1,650 | 27 | Des Moines, Iowa | 52.5 | WNW | 4,600 | 10 | Moline, Ill. | 54.0 | WNW | 12,070 | 11 | St. Louis, Mo. |
| South-Central [6] | 45.3 | WSW | 2,310 | 30 | Big Spring, Tex. | 44.8 | WSW | 3,930 | 24 | Big Spring, Tex. | 60.0 | W | 12,870 | 11 | Abilene, Tex. |
| Northwest [7] | 28.1 | WSW | 2,440 | 14 | Billings, Mont. | 39.3 | N | 5,000 | 23 | Medford, Oreg. | 58.5 | NNW | 7,350 | 23 | Spokane, Wash. |
| West-Central [8] | 43.8 | SW | 2,500 | 27 | Reno, Nev. | 50.6 | NW | 5,000 | 22 | Redding, Calif. | 70.0 | NW | 8,130<br>8,950 | 22 | Redding, Calif. |
| Southwest [9] | 40.0 | SW | 2,280 | 18 | Roswell, N. Mex. | 56.4 | SSE | 3,810 | 20 | Sanberg, Calif. | 60.2 | W | 10,240 | 30 | Albuquerque, N. Mex. |

[1] Maine, Vermont, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania and Northern Ohio.
[2] Delaware, Maryland, Virginia, West Virginia, Southern Ohio, Kentucky, Eastern Tennessee and North Carolina.
[3] South Carolina, Georgia, Florida and Alabama.
[4] Michigan, Wisconsin, Minnesota, North Dakota and South Dakota.
[5] Indiana, Illinois, Iowa, Nebraska, Kansas and Missouri. (Chicago, Ill., not received).
[6] Mississippi, Arkansas, Louisiana, Oklahoma, Texas (except El Paso), and Western Tennessee.
[7] Montana, Idaho, Washington and Oregon.
[8] Wyoming, Colorado, Utah, Northern Nevada and Northern California.
[9] Southern California, Southern Nevada, Arizona, New Mexico, and extreme West Texas.

## RIVER STAGES AND FLOODS

By BENNETT SWENSON

There was a marked deficiency of precipitation during April in the Atlantic area from Georgia northward with the driest area centered in Virginia. In contrast there was an abundance of precipitation and accompanying damaging floods in a large area comprising the six States, Colorado, New Mexico, Kansas, Oklahoma, Arkansas, and Texas.

*St. Lawrence drainage.*—Light flooding occurred again during April in the Maumee River system. The stages had fallen to fairly low stages following the overflows in March but with moderately heavy rains from April 6 to 10, the stages rose to slightly above flood stage. The Sandusky River also overflowed, reaching a stage of 13.6 feet at Upper Sandusky, Ohio, on April 11.

*Atlantic Slope drainage.*—River stages were moderately high in New England, stages slightly above flood stage being recorded in the Connecticut River; in South Carolina and Georgia, the stages were generally above flood from March. Otherwise, stages were generally low.

A snow survey made on April 3–6 at 23 stations in the Merrimack Basin above Franklin, N. H., showed an average snow depth of 16.8 inches, with an average water content of 5.79 inches compared with a value of 4.45 inches of water obtained from a survey of February 10–16. A survey of 8 selected stations in the Pemigewasset River Basin on April 14 gave an average water content of 6.06 inches, or a decrease of 1.08 inches for that basin since the April 3–6 survey.

The entire Merrimack Basin, except the upper reaches of the Contoocook River, was clear of snow cover before April 1. All river ice had disappeared from the reaches below Franklin by March 18, which is unusually early.

A moderate rise occurred in the main river on April 8–10 but did not reach bankfull. It was produced by rainfall on the 7th, averaging one-half inch over the basin. The estimated run-off from snow was 1 inch. Lesser peak stages occurred later, with flows continuing moderately high into the first week of May.

Moderate rains on the 7th and 8th and run-off from melting snow in the Upper Connecticut River resulted in high water generally and a stage of 17.2 feet at Hartford, Conn., on April 10. Unseasonably high temperatures during the remainder of the month accelerated snow melt and caused a general rise in most upper river tributaries, cresting at South Newbury, Vt., on April 28 at a stage of

22.7 feet. The crest leveled out downstream without much discharge from the lower tributaries. No actual damage occurred from the high water during April; however, river transportation and construction along the river were delayed or inconvenienced; at Hartford, the stages remained above 7 feet the entire month.

Flood stages continued in the Ogeechee and Altamaha River Basins from the preceding month. In the former basin, flooding continued until April 5. In the latter basin, floods prevailed in the lower Ocmulgee, lower Oconee, and in the Altamaha River at the beginning of April as the result of the heavy rainfall of March 20–21. Crest stages had been reached in March on all gages except those in the lower Altamaha; the flood crested at Doctortown, Ga., on April 2–3 and at Everett City, Ga., on April 5.

The damage was not severe in any locality in the basins of the Oconee, Ocmulgee, and Altamaha Rivers, although a stage equal to the highest of record, 26 feet, occurred at Macon, Ga. (Ocmulgee River), on March 22, and a high stage of 32.6 feet at Milledgeville, Ga. (Oconee River), on the same date. The crest in the Altamaha River was flat due to the fact that the peak discharge from the crest in the Ocmulgee reached the Altamaha after the crest in the Oconee River.

*East Gulf of Mexico drainage.*—Overflows in this area were mainly a continuation of floods which began in March. Flood conditions developed in the Chattahoochee, Flint, and Apalachicola Rivers, from excessive rains that occurred between Eufaula, Ala., and Dahlonega, Ga., on March 20–21. Rainfall amounts ranged from 4 to 6 inches between West Point and Griffin, Ga., with 2 to 4 inches over the watershed north of Atlanta, Ga., and less than 1 inch south of Eufaula, Ala., and Montezuma, Ga. Crest movement was fairly rapid in the upper Chattahoochee, but became gradually slower downstream due to additional rains, light to moderate, that occurred between March 26 and 28. Damage was light, although somewhat greater in the River Junction—Blountstown, Fla., area on the Apalachicola River.

*Upper Mississippi Basin.*—Light flooding occurred during the month in the Salt and Meramec Rivers in Missouri and in the Illinois River. In the latter stream, flood stages prevailed from March through most of April.

Melting snows in the headwaters of the Mississippi in March crested stages in the upper reaches during the last few days of March and the first of April. The main river exceeded flood stage only at Hannibal and Louisiana, Mo., on April 10 to 11, where stages were slightly above flood stage.

*Missouri Basin.*—Damaging flash floods occurred during the night of April 18–19, in Medicine, Coon, and Red Willow Creeks, tributaries of the Republican River between Cambridge and McCook, Nebr. Considerable damage resulted in and around Indianola, Cambridge, and Bartley, Nebr.; the total loss in this area has been estimated at more than $120,000. The Republican River rose to bankful in Nebraska, with slight overflows in low places in the vicinity of Guide Rock, Nebr., on April 21.

Light floods occurred at a few points along the Solomon and Osage Rivers in Kansas, and moderate floods in the Upper South Platte and in the Smoky Hill River. The latter stream overflowed twice during the month at Lindsborg and Salina, Kans. The second rise was the higher, occurring 3 days after the first, and exceeded flood stage at Lindsborg by 5 feet on April 26, and by 2 feet at Salina on April 28. At the latter place, 40 city blocks were flooded and 150 basements filled by the floodwaters. Damage from the two rises totaled $22,600 of which the greater part was to growing crops.

*Ohio Basin.*—Heavy rains occurred over all of the Ohio Basin, except in the upper Tennessee and Cumberland River Basins, from the 7th to the 10th and caused a general rise in the Ohio from Pittsburgh to its mouth. Flood stages were exceeded, however, only at Dam No. 7, in the upper portion, and from Mount Vernon, Ind., to Cairo, Ill., in the lower portion. The stages were not high enough to cause any significant damage.

In the basin above Pittsburgh, Pa., the rainfall was heaviest over the lower Monongahela, Youghiogheny, and upper Kiskiminetas Basins, the maximum 24-hour amount being 3.13 inches at Johnstown, Pa. Flood stage was exceeded only at Lock No. 5 on the Allegheny River.

Light to moderate floods occurred in the Hocking, Olentangy, and Scioto Rivers in Ohio, but losses were small. In Kentucky, the Green River from Brownsville, Ky., to the mouth, and the Rough and Barren Rivers, tributaries of the Green, were in moderate flood. The total loss in the Green River Basin has been estimated at $17,000 of which the greater part was to growing crops. In the Wabash River Basin, a considerable rise occurred throughout the entire watershed and low to moderate flood stages were recorded at most of the stations. The total damage for the basin has been estimated at over $90,000.

Flood stages were not reached in the Cumberland or Tennessee Rivers although the rains were heavy over the lower portions. The rainfall of April 7–10 averaged 4.50 inches in the Lower Cumberland with 3 inches of this amount falling within 24 hours up to 7 a. m. of the 9th. In the same 24 hours, 4.90 inches occurred at Johnsonville, Tenn., in the Lower Tennessee Basin. The rainfall was considerably less in the upper portions of these basins. The total monthly precipitation at Asheville, N. C., in the Upper Tennessee Basin, 1.08 inches, was the lowest April amount in 40 years of record. Stream flow at Knoxville, Tenn., during the month was the lowest flow recorded during the past 42 years.

*Lower Mississippi Basin.*—Heavy rains over most of the basin from the 6th to the 9th resulted in moderate flooding in the St. Francis and Yazoo River Basins. In the Upper St. Francis Basin the rainfall averaged 4.16 inches, and in the Upper Yazoo Basin about 6 inches. Moderate overflows of low-lying farm land along the St. Francis River from Wappapello, Mo., to below St. Francis, Ark., occurred, and in the Yazoo Basin about 325,000 acres of land were inundated.

*Arkansas-White-Red Basins and West Gulf of Mexico drainage.*—Widespread floods, unusually severe in some cases, occurred in most of this drainage area. Outstanding among these floods were the unusually high stages in the Purgatoire River in Colorado and in the Arkansas River from the mouth of Purgatoire River through most of Kansas; and in the Trinity River, where the highest stages since 1908 were reached twice during the month at Dallas, Tex., and exceeded at Trinidad, Tex. A full report of these floods will be made in a later issue of the REVIEW.

## ESTIMATED FLOOD LOSSES AND SAVINGS, APRIL 1942 [1]

| River and drainage | Tangible property | Matured crops | Prospective crops | Livestock and other movable farm equipment | Suspension of business | Total losses | Total savings |
|---|---|---|---|---|---|---|---|
| ATLANTIC SLOPE | | | | | | | |
| Altamaha River [2] | $9,500 | $400 | $16,800 | $10,500 | $17,500 | $54,700 | $78,000 |
| EAST GULF OF MEXICO | | | | | | | |
| Apalachicola River [2] | 100 | ------ | 150 | 1,000 | 10,000 | 11,250 | 5,000 |
| MISSOURI BASIN | | | | | | | |
| Smoky Hill River | 1,600 | ------ | 19,000 | 1,000 | 1,000 | 22,600 | 10,000 |
| Republican River [3] | 120,850 | ------ | ------ | ---------- | ---------- | 120,850 | ------ |
| OHIO BASIN | | | | | | | |
| Green River | 1,000 | ------ | 15,000 | ---------- | 1,000 | 17,000 | (4) |
| Wabash River | 30,500 | ------ | 61,600 | ---------- | 11,200 | 103,300 | 14,750 |
| Ohio River | ---------- | ------ | 1,500 | ---------- | 2,750 | 4,250 | 10,000 |
| LOWER MISSISSIPPI BASIN | | | | | | | |
| Yazoo River | ---------- | ------ | 300,000 | ---------- | 175,000 | 475,000 | 25,000 |
| WEST GULF OF MEXICO | | | | | | | |
| Brazos River | 10,000 | 750 | 78,500 | 2,500 | 26,000 | 117,750 | 5,625 |

[1] Complete data for floods in White-Arkansas-Red Basins and West Gulf of Mexico drainage not available.
[2] March and April.
[3] Including livestock.
[4] Figures not available but believed considerable because of timely moving of livestock and farm machinery.

## FLOOD-STAGE REPORT, APRIL 1942

[All dates in April unless otherwise specified]

| River and station | Flood stage | Above flood stages—dates | | Crest | |
|---|---|---|---|---|---|
| | | From— | To— | Stage | Date |
| ST. LAWRENCE DRAINAGE | | | | | |
| *Lake Erie* | | | | | |
| | *Feet* | | | *Feet* | |
| St. Marys: Decatur, Ind | 13 | 9 | 14 | 17.8 | 12 |
| St. Joseph: Montpelier, Ohio | 10 | 11 | 12 | 10.4 | 12 |
| Maumee: Fort Wayne, Ind | 15 | 10 | 11 | 15.1 | 15 |
| Sandusky: Upper Sandusky, Ohio | 13 | 11 | 11 | 13.6 | 11 |
| ATLANTIC SLOPE DRAINAGE | | | | | |
| Connecticut: | | | | | |
| South Newbury, Vt | 22 | 27 | 29 | 22.7 | 28 |
| Hartford, Conn | 16 | 9 | 11 | 17.2 | 10 |
| Santee: Rimini, [1] S. C | 12 | (2) | 1 | 15.1 | Mar. 26 |
| Ogeechee: Dover, Ga | 7 | (2) | 5 | 9.9 | Mar. 29 |
| Ocmulgee: | | | | | |
| Abbeville, Ga | 11 | (2) | 3 | 17.8 | Mar. 27-28 |
| Lumber City, Ga | 15 | (2) | 4 | 19.6 | Mar. 31 |
| Oconee: Mount Vernon, Ga | 16 | (2) | 3 | 20.9 | Mar. 28 |
| Altamaha: | | | | | |
| Charlotte, Ga | 12 | (2) | 18 | 23.7 | Mar. 31 |
| | | | | 12.9 | 15 |
| Doctortown, Ga | 10 | 2 | 3 | 10.0 | 2-3 |
| Everett City, Ga | 10 | (2) | 13 | 13.9 | 5 |
| EAST GULF OF MEXICO DRAINAGE | | | | | |
| Flint: Bainbridge, Ga | 25 | (2) | 1 | 27.9 | Mar. 31 |
| Apalachicola: Blountstown, Fla | 15 | (2) | 8 | 22.1 | Mar. 27-28 |
| Tombigee: | | | | | |
| Lock No. 3, Ala | 33 | (2) | 3 | 53.6 | Mar. 25 |
| Lock No. 2, Ala | 46 | (2) | 1 | 54.8 | Mar. 27 |
| Lock No. 1, Ala | 31 | (2) | 4 | 37.0 | Mar. 29-30 |
| Pascagoula: Merrill, Miss | 22 | (2) | 1 | 23.2 | Mar. 29 |
| Pearl: Pearl River, La | 12 | (2) | 4 | 14.0 | Mar. 28 |
| MISSISSIPPI SYSTEM | | | | | |
| *Upper Mississippi Basin* | | | | | |
| Salt: New London, Mo | 19 | 11 | 11 | 19.25 | 11 |
| Illinois: | | | | | |
| Havana, Ill | 14 | (2) | 22 | 16.2 | Mar. 24-25 |
| | | | | 15.7 | 12 |
| Beardstown, Ill | 14 | (2) | 25 | 17.2 | Mar. 24-26 |
| | | | | 17.4 | 14 |
| Meramec: | | | | | |
| Sullivan, Mo | 11 | 10 | 10 | 11.2 | 10 |
| Pacific, Mo | 11 | 10 | (2) | [4] 12.7 | 11 |
| Valley Park, Mo | 14 | 11 | 11 | 14.3 | 11 |

See footnotes at end of table.

## FLOOD-STAGE REPORT, APRIL 1942—Continued

| River and station | Flood stage | Above flood stages—dates | | Crest | |
|---|---|---|---|---|---|
| | | From— | To— | Stage | Date |
| MISSISSIPPI SYSTEM—continued | | | | | |
| *Upper Mississippi Basin*—Continued | | | | | |
| Meramec—Continued | | | | | |
| Mississippi: | *Feet* | | | *Feet* | |
| Hannibal, Mo | 13 | 10 | 11 | 13.2 | 10 |
| Louisiana, Mo | 12 | 10 | 11 | 12.4 | 11 |
| | | 18 | 20 | [4] 12.2 | 18 |
| *Missouri Basin* | | | | | |
| Solomon: Beloit, Kans | 18 | 25 | 27 | 21.7 | 26 |
| Smoky Hill: | | | | | |
| Lindsborg, Kans | 21 | 22 | 23 | 22.9 | 22-23 |
| | | 25 | 27 | 26.0 | 26 |
| Salina, Kans | 20 | 24 | 24 | 20.0 | 24 |
| | | 27 | 28 | 22.5 | 28 |
| Republican: Guide Rock, Nebr | 9 | 20 | 21 | 10.1 | 21 |
| Osage: LaCygne, Kans | 25 | 10 | 11 | 25.2 | 10 |
| *Ohio Basin* | | | | | |
| Allegheny: Lock No. 5, Schenley, Pa | 24 | 10 | 10 | 24.5 | 10 |
| Hocking: Athens, Ohio | 17 | 11 | 11 | 17.8 | 11 |
| Olentangy: Delaware, Ohio | 9 | 10 | 10 | 10.1 | 10 |
| Scioto: | | | | | |
| Larue, Ohio | 11 | 9 | 11 | 13.1 | 10 |
| Prospect, Ohio | 10 | 10 | 13 | 12.0 | 11 |
| Circleville, Ohio | 14 | 10 | 12 | 16.7 | 11 |
| Chillicothe, Ohio | 16 | 12 | 12 | 16.8 | 12 |
| Barren: Bowling Green, Ky | 28 | 11 | 11 | 28.8 | 11 |
| Rough: Dundee, Ky | 25 | 10 | 14 | 28.2 | 11 |
| Green: | | | | | |
| Lock No. 6, Brownsville, Ky | 28 | 12 | 12 | 28.0 | 12 |
| Lock No. 4, Woodbury, Ky | 33 | 10 | 14 | 38.5 | 12 |
| Lock No. 2, Rumsey, Ky | 34 | 11 | 19 | 38.1 | 16 |
| West Fork of White: | | | | | |
| Anderson, Ind | 10 | 9 | 12 | 11.3 | 10 |
| Elliston, Ind | 18 | 9 | 15 | 25.0 | 12 |
| Edwardsport, Ind | 12 | 9 | 19 | 21.4 | 14 |
| East Fork of White: Seymour, Ind | 14 | 10 | 12 | 15.1 | 11 |
| White: | | | | | |
| Petersburg, Ind | 16 | 10 | 19 | 22.1 | 16 |
| Hazleton, Ind | 16 | 11 | 21 | 23.0 | 17 |
| Wabash: | | | | | |
| Bluffton, Ind | 10 | 11 | 13 | 10.8 | 12 |
| Wabash, Ind | 12 | 9 | 13 | 16.0 | 11 |
| LaFayette, Ind | 11 | 9 | 15 | 17.5 | 12 |
| Covington, Ind | 16 | 9 | 16 | 21.0 | 13 |
| Terre Haute, Ind | 14 | 9 | 18 | 16.9 | 14-15 |
| Riverton, Ind | ---------- | ---------- | ---------- | 18.2 | 17-18 |
| Vincennes, Ind | 14 | 12 | 20 | 15.3 | 17-18 |
| Mount Carmel, Ill | 17 | 11 | 21 | 21.4 | 17-18 |
| New Harmony, Ind | 15 | 15 | 22 | 17.1 | 19 |
| Ohio: | | | | | |
| Dam No. 7, Midland, Pa | 30 | 11 | 11 | 32.0 | 11 |
| Mount Vernon, Ind | 35 | 17 | 19 | 35.2 | 18 |
| Dam No. 49, Uniontown, Ky | 37 | 19 | 19 | 37.1 | 19 |
| Shawneetown, Ill | 33 | 13 | 22 | 36.8 | 18 |
| Dam No. 50, Fords Ferry, Ky | 34 | 13 | 23 | 38.5 | 19 |
| Dam No. 53, near Mound City, Ill | 42 | 14 | 17 | 42.4 | 15-16 |
| Cairo, Ill | 40 | 12 | 20 | 42.4 | 15-16 |
| *White Basin* | | | | | |
| Current: Doniphan, Mo | 10 | 11 | 12 | 10.2 | 11 |
| Black: | | | | | |
| Poplar Bluff, Mo | 16 | 9 | 12 | 17.2 | 11 |
| Black Rock, Ark | 14 | 8 | 25 | 23.0 | 10 |
| | | 29 | 30 | 14.6 | 29 |
| Little Red: Heber Springs, Ark | 30 | 9 | 9 | 32.3 | 9 |
| White: | | | | | |
| Calico Rock, Ark | 18 | 9 | 10 | 19.3 | 10 |
| Batesville, Ark | 23 | 9 | 13 | 25.4 | 10 |
| Newport, Ark | 26 | 12 | 17 | 27.9 | 15 |
| Georgetown, Ark | 21 | 11 | (5) | 24.8 | 17 |
| | | | | 22.2 | 30 |
| Des Arc, Ark | 24 | 13 | (5) | 27.6 | 18-19 |
| | | | | 24.6 | 30 |
| Clarendon, Ark | 26 | 13 | (5) | 29.3 | 21-22 |
| St. Charles, Ark | 25 | 16 | (5) | 27.6 | 24 |
| | | | | 27.7 | 27-28 |
| *Arkansas Basin* | | | | | |
| Cimarron: Perkins, Okla | 11 | 9 | 10 | 12.7 | 10 |
| | | 17 | 17 | 11.7 | 17 |
| | | 18 | 21 | 14.4 | 20 |
| | | 22 | 24 | 13.9 | 23 |
| | | 24 | 28 | 13.2 | 26 |
| Verdigris: Sageeyah, Okla | 35 | 12 | 12 | 35.1 | 12 |
| | | 21 | 23 | 36.3 | 22 |
| Neosho: | | | | | |
| Parsons, Kans | 22 | 10 | 10 | 22.2 | 10 |
| Oswego, Kans | 17 | 9 | 12 | 19.9 | 11 |
| Fort Gibson, Okla | 22 | 9 | 12 | 24.6 | 11 |
| | | 21 | 22 | 26.1 | 22 |
| | | 25 | 26 | 23.0 | 25 |
| | | 27 | 29 | 27.4 | 28 |
| North Canadian: | | | | | |
| Woodward, Okla | 5 | 22 | 22 | 5.4 | 22 |
| Canton, Okla | 9 | 23 | 23 | 9.6 | 23 |
| Yukon, Okla | 8 | (2) | (5) | 13.2 | 10 |
| | | | | 13.4 | 20 |
| | | | | 14.3 | 25 |

See footnotes at end of table.